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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/532,965 | 04/27/2005 | Ja-Nam Ku | Q87567 | 9029 |

23373 7590 10/31/2006
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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT PAPER NUMBER

1725

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/532,965

Applicant(s)

KU ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3 and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshikawa (USPN 5084961).

Yoshikawa teaches a compression bonding method comprising patterning bonding metal dots (16) on a glass substrate (16), placing the bonding element above the bonding dots and applying heat to the substrate and pressure to the bonded element (figure 2b and col 3 lines 29-41). In an alternate embodiment metal stripes or dots (43) are patterned on a glass substrate which is bonded to another glass substrate (20). See figure 6 and col 3 lines 42-68 and col 5 lines 28-68. Bonding occurs at a temperature below 350 C (col 4 lines 15-27).

3. Claims 1 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Soga et al. (US 2006/0061974 A1).

Soga teaches a compression bonding method comprising patterning bonding metal dots (18, 21) on a substrate (29), placing the element above the bonding dots and applying heat to the substrate and pressure to the bonded element (figure 7a and paragraphs 121 and 128-130). Bonding occurs at a temperature below 350 C (paragraphs 2-5 and 78).

4. Claims 1-6, 8-12 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jairazbhoy et al. (US 2002/0000331 A1).

Jairazbhoy teaches a compression bonding method comprising patterning bonding metal dots (16) on a metal substrate (80), disposing a second bonding metal (99) on bonded element, placing the bonding element above the bonding dots and applying heat to the substrate and pressure to the bonded element (figure 12B and paragraphs 36, 37, 43 and 49). The dots comprise aluminum (paragraph 37). In an alternate embodiment metal dots (62) are patterned on a metal substrate (80) which is bonded to a metal sheet (10). See figure 1B and paragraph 30.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jairazbhoy et al. (US 2002/0000331 A1) in view of Soga et al. (US 2006/0061974 A1).

Jairazbhoy teaches a compression bonding method comprising patterning bonding metal dots (16) on a metal substrate (80), disposing a second bonding metal (99) on bonded element, placing the bonding element above the bonding dots and applying heat to the substrate and pressure to the bonded element (figure 12B and paragraphs 36, 37, 43 and 49). The dots comprise aluminum (paragraph 37). In an alternate embodiment metal dots (62) are patterned on a metal substrate (80) which is bonded to a metal sheet (10). See figure 1B and paragraph 30. Although it is known in the art that processing temperature will be dependent upon the solder material used, neither is the solder disclosed nor a processing temperature taught.

Soga teaches a compression bonding method comprising patterning bonding metal dots (18, 21) on a substrate (29) (figure 7a and paragraphs 121 and 128-130) wherein bonding occurs at a temperature below 350 C (paragraphs 2-5 and 78).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ conventional low temperature solders to promote strong, reliable bonds without damaging electronic components.

Response to Arguments

7. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reiser et al. (USPN 3881043, adhesive stripes and dots), Schwartz et al. (USPN 3881043, conductive adhesive) and Nishida (USPN 6981317 B1).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 7:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson
Primary Examiner
Art Unit 1725

LLE
10/27/10

LRE